2009 EDUCATION AND THE ENVIRONMENT INITIATIVE CURRICULUM REVIEW

PUBLIC COMMENT DOCUMENT

Instructions:

1. List the title of the material, subject, grade level, and page number(s) referenced in your public comment.
2. Be specific in your comments–include the location in the materials (e.g., lesson number, headings, page numbers, etc.) that your comments address. Provide a reason why the content is inaccurate or does not meet the content standards, evaluation criteria, or social content standards and, if applicable, suggest a correction to the identified problem.
3. Include your printed or typed name and address.
4. Sign the document.
5. Return the document by mail, e-mail, or fax as indicated at the bottom of this page. Please see the timeline indicated on the Education and the Environment Initiative (EEI) Web page for receipt of public comment.

Title of Material:	**Subject:**
11.5.7: *"Mass Production, Marketing and Consumption in the Roaring Twenties"* Teacher's Edition	☑ **History–Social Science** ☐ **Science**
Page Numbers: 88-106	**Grade Level: 11**

Comments:

In response to Cal/EPA's request for input and feedback on proposed EEI curriculum units, the American Chemistry Council (ACC) offers comments on unit 11.5.7: *Mass Production, Marketing, and Consumption in the Roaring Twenties.* More specifically, we are commenting on "Lesson 5: Managing the Consequences." (pages 88-106)

The ACC respectfully believes that this lesson plan is extensive in its inaccuracies and "bias" about plastic and plastic bags. The ACC takes exception to the overall tone, instructional approach, and the lack of solutions offered – most especially the lack of mention of the overall solution of plastic recycling.

Below are suggested recommendations for a different instructional approach for this lesson. The ACC will clarify specific lesson plan input later on in this document.

- On the basis of a sectional comparison, why are bans the only solution recommended for plastic bags? Do other lessons in the curriculum unit recommend the ban of cars or tires, etc?
- We recommend that the lists of concerns related to plastic bags be balanced with a measured response regarding efforts already being made by the industry, the State of California and others, to promote the recycling and reuse of plastic bags. Plastic bags have valuable second lives. More specifically, we note the lack of mention of the state law (AB 2449) that requires retailers of a certain size to offer recycling opportunities for plastic bags and film in-store.
- Plastics bags are referred to in the lesson plan as "litter." To be clear, plastic bags don't start as litter; they can *become* litter through behavioral actions leading to inappropriate disposal.
- As it pertains to this subject, California schools should teach California law; the state law (AB 258) that requires the industry to establish "best practices" in the way it treats and "corrals" its materials in the manufacturing process, the state law (AB 2449) requiring grocery stores and similar business to provide plastic bag recycling bins for the public, and 2009 legislation (AB 1141), calling for an industry-imposed fee on plastic bag manufacturers, with revenue collected going to fund recycling programs and recycling education.
- The facts and reasoning stated in this lesson plan are positioned as advocacy. Should schools be in the position of teaching only one side of an issue? We believe education works best when students are exposed to all viewpoints, alternatives and attitudes, particularly when addressing socially

complex issues like the issues contained in this lesson plan. This is not a "two-plus-two" problem with only one correct answer; the ACC believes this issue has more than one solution, including the recycling of plastic bags.

Following, the ACC has outlined the specific elements of the lesson where changes are suggested, and have included recommendations and input to present a more balanced point of view on the topic:

Page 89

"...Americans discard an estimated 100 billion polyethylene plastic bags each year, recycling as little as 1% of them..."

Suggested change/addition:

We recommend including statistics from a recent study conducted by Moore Recycling Associates, which found that an estimated 830,180,000 pounds of post-consumer film (including plastic bags and product wraps) was recovered in 2007, representing a 27% increase from the 652,477,000 pounds recovered in 2005.[1]

The report notes that these numbers are likely to be conservative given the shift toward export markets that occurred during 2007 and the challenge of collecting survey data from export buyers. The report also doesn't account for data collected after the enactment of the 2007 California state law requiring grocery stores to recover post-consumer plastic bags and product wraps from their customers (which didn't become state law until July 2007). Recovered plastic bags and wraps can be recycled into many products, including backyard decking, fencing, railings, shopping carts and new bags.

Another statistic worth consideration:

According to U.S. Environmental Protection Agency data, about 12 percent of plastic bags and film are recycled annually.[2]

Page 94 - Plastic Bag Lecture Notes: "III. Problems With Plastic Bags"

To counteract what is perceived as an exclusively negative positioning of plastic bags issues, we recommend adding a section here entitled "*Benefits* of Plastic Shopping Bags."

Recommended language for "Benefits of Plastic Shopping Bags":

- Energy efficient – Plastic grocery bags require 70 percent less energy to manufacture than paper ones.
- Lightweight and compact – Lightweight plastic bags help save space and fuel in transport. For every seven trucks needed to deliver paper bags - only one truck is needed for the same number of plastic bags, helping to save energy and reduce emissions.
- Reusable – More than 90 percent of today's consumers reuse plastic bags as liners for household wastebaskets, shoe totes and laundry or garment bags.
- Recyclable – Recycled plastic bags can be made into a wide range of second generation products, including new bags, plastic lumber for decking, park benches and picnic tables.

In addition, these tips are helpful:

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[1] Moore Recycling Associates. *2007 National Post-Consumer Recycled Plastic Bag & Film Report*. See: http://www.americanchemistry.com/s_plastics/sec_content.asp?CID=1593&DID=8899

[2] U.S. Environmental Protection Agency. *Municipal Waste in the United States: 2007 Facts and Figures (p 52, Table 7)* See: http://www.epa.gov/osw/nonhaz/municipal/pubs/msw07-rpt.pdf

Reuse and Recycling Tips

- Many bags can be reused or recycled, but consumers may not know what to do or where to take them. The following tips can help your readers recycle and reuse more plastic bags.
- Use a bag more than once before throwing it away. Plastic bags can be reused in a variety of ways:
    - Wet umbrella cover – keep other items in your bag dry when your umbrella is wet
    - Doggie duty – bring them on dog walks to collect and dispose of pet waste
    - Hand protectors – place them over your hands to handle messes indoors and out
    - Kitchen clean-up – place them under the cutting board for quick scrap removal
    - Suitcase savers – wrap shoes before packing them with clean clothes

For more information on plastic bag recycling or where consumers can recycle bags in their communities, visit: www.plasticbagrecycling.org.

Bring bags back for recycling.
Many grocers and retailers now offer drop-off programs that allow consumers to return their used bags to be recycled (AB 2449). In most stores, bag collection areas are located at the front entrance or near checkout areas. Check with your grocer and other area retailers to see whether bags are recycled in your community.

All clean bags labeled #2 (HDPE) or #4 (LLDPE) are recyclable, including:

- Grocery bags
- Retail bags (remove hard plastic or string handles)
- Plastic newspaper bags
- Dry cleaning bags (remove paper and hangers)
- Mattress bags

Recommended Additional Lesson Activity
Encourage students studying this lesson plan to engage in a project or extra-curricular activity where they "partner" with neighborhood grocery stores to "adopt-a-bin" – decorating a store recycling bin in order to improve or promote plastic bag recycling.

Page 95 – III – Problems with Plastic Shopping Bags (continued)
"f. The patch is called a "plastic stew" and is estimated to be twice the size of the state of Texas."

There is on-going argument about the actual size of this plastic patch so we recommend including clarifying language in this point, such as: "…the size of the patch has been debated but has been estimated to be…"

No one disputes that there is too much trash or litter in the ocean, and one piece of plastic in the ocean is too many. To stimulate a fair debate in the classroom, however, efforts should be made to separate accurate facts and statistics from hyperbole and alleged facts.

"h. Studies of the seafloor in the northwestern Mediterranean found that plastics made up 77% of the debris on the seafloor. Of this debris, 93% was plastic bags." (page 95)

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[3] The City of San Francisco. *City of San Francisco Department of Environment Litter Survey Report – July 2008.* See: http://www.sfenvironment.org/downloads/library/2008_litter_audit.pdf

This point appears to be included in an attempt to maximize the potential problem. Was it the goal of the lesson creator to find the starkest example of marine debris make-up and impact? No one disagrees that the problem of marine debris is real. But why is this study relating to the Mediterranean Sea the only study cited?

"j. In 2007, the city of San Francisco banned the use of plastic shopping bags in large supermarkets and retail pharmacy chains. This law has eliminated the use of an estimated five million plastic bags each month." (page 95)

We recommend additional language in this point:

"...However, recently it has been discovered that San Francisco's 2007 ban on plastic grocery bags encouraged shoppers to switch to using paper bags, which require 70 percent more energy to manufacture, produce 50 percent more greenhouse gas emissions and create five times more waste than plastic bags. Ironically, litter in San Francisco has not decreased, which was one of the stated purposes of the city's ban.[3]

Page 98 – Answer Key and Sample Answers

We recommend that benefits of plastic bags recycling and re-use need to be represented graphically on the page along with the other lesson elements.

Recommended language for "Benefits of Plastic Shopping Bags":

- Energy efficient – Plastic grocery bags require 70 percent less energy to manufacture than paper ones.
- Lightweight and compact – Lightweight plastic bags help save space and fuel in transport. For every seven trucks needed to deliver paper bags - only one truck is needed for the same number of plastic bags, helping to save energy and reduce emissions.
- Reusable – More than 90 percent of today's consumers reuse plastic bags as liners for household wastebaskets, shoe totes and laundry or garment bags.
- Recyclable – Recycled plastic bags can be made into a wide range of second generation products, including new bags, plastic lumber for decking, park benches and picnic tables.

In addition, these tips are helpful:

Reuse and Recycling Tips

- Many bags can be reused or recycled, but consumers may not know what to do or where to take them. The following tips can help your readers recycle and reuse more plastic bags.
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community.

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Page 99 – (Question) 2. What might be done to change the cycle of mass production, marketing, and consumption of plastic bags? (4 points)

New technologies could recycle disposed materials in an inexpensive manner to create sturdy, affordable, convenient bags for instead of plastic shopping bags. This way, natural systems would benefit from less waste going into landfills. Oil and natural gas would no longer be needed to make the plastic bags. Marketing efforts could present these reusable bags as a great alternative and create demand for recycled-material bags as the solution for future generations. Consumers can be convinced that plastic shopping bags not "cool" and that the new bags lead to a better life. The new bags would be designed to last a lifetime."

Again, we recommend adding text referring to the second life of plastic products and the increase in the recycling of plastic bags.

Recovered plastic bags and wraps can be recycled into many products, including backyard decking, fencing, railings, shopping carts and new bags. Plastics make cars lighter, increase fuel efficiency, protect our children (car seats, baseball helmets), and are included in many innovative, life-saving medical devices (hearing aides, prosthetic limbs).

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Title of Material:	**Subject:**
12.3.2: "Active Voices: Civil Society and the Environment" for the "Action Plan Assignment" on pages 26-27. Teacher's Edition 12.3.2: "A School's Water Dilemma" on pages 53-54. Teacher's Edition	☑ **History–Social Science** ☐ **Science**
Page Numbers: pages 26-27 and pages 53-54	**Grade Level:** 12

Comments:

In response to Cal/EPA's request for input and feedback on proposed EEI curriculum units, the American Chemistry Council offers comments on the following activities in Unit 12.3.2:

- "Active Voices: Civil Society and the Environment" for the "Action Plan Assignment" on pages 26-27.
- "A School's Water Dilemma" on pages 53-54.

In Unit, 12.3.2, "Active Voices: Civil Society and the Environment" for the "Action Plan Assignment" reads as follows:

"...You have a strong opinion about one of the issues below and you would like to influence the decision that will be made about it. Create an action plan for influencing the decision to go your way, based on what you have learned about civil society, the rights given to individuals in the U.S. Constitution, and the strategies used by stakeholders in various cases that you are now familiar with.

Your action plan must discuss and describe the following:

- **The issue you have an opinion about;**
- **All the stakeholders involved in the issue and the perspective of each on this issue;**
- **The forums available to you to voice your opinion and exert influence on the decision-makers dealing with the issue;**
- **The action(s) you recommend taking to ensure success (to get what you want).**

The Issues

Issue #1: Whether or not to set aside land (space) in a new housing development to be a park and wilderness area.

Issue #2: Whether or not to charge shoppers an extra fee for using disposable shopping bags (plastic or paper).

Issue #3: Whether or not to ban cigarette smoking on public beaches. Your action plan may take one of the following forms: a written report, a PowerPoint presentation, a display or presentation board.

Please let the teacher know which method you are considering." (page 27)

The teacher receives additional instructions for this activity on page 26. In those instructions we recommend that the

teacher divides the students into two groups representing both sides of each issue, so that the debate is fair and impartial. For example, if one student is instructed to advocate for an extra fee for using disposable shopping bags, then another student would be instructed to advocate that no extra fee should be placed on disposable shopping bags. In addition, we believe this unit creates an opportunity to educate students about California's recycling law (AB 2449)[1]. This law went into effect July 1, 2007, and requires that large grocery stores and pharmacies offer programs to take back plastic bags for recycling. Under the law, shoppers can also recycle their dry cleaning bags; newspaper bags; bread, produce and cereal bags; and product wraps from paper towels, napkins, bathroom paper, and cases of soda[2].

Below are statistics we recommend for inclusion in the instructional materials related to this activity:

According to EPA's data, 12 percent of plastic bags and film were recycled nationally in 2007[3]. Plastic grocery bags are fully recyclable and the number of recycling programs is increasing daily. From 2005 to 2007, plastic bag and film recycling increased 27% nationally to reach 830 million pounds[4]. Backyard decking, building and construction products, shopping carts and new bags are products that can be made from recycled plastic bags and product wraps.

"A School's Water Dilemma" in Unit 12.3.2 reads as follows:

"Last Friday, several student groups asked for meetings with the school administration. All wanted to talk about water. Two recent events sparked the interest in this natural resource.

The first event was ninth-grader Malia Robinson's science project, which showed high levels of bacteria in water taken from school drinking fountains. Robinson said about her project, "I observed each water fountain in the school for at least 15 minutes. I saw sneezing, coughing, and spitting while people were using the fountains. It was gross!"

The second event was this paper's publication of an article detailing how many plastic water bottles end up in landfills. According to some experts, only one in four bottles is recycled. The rest end up in landfills, where they can take up to 1,000 years to degrade.

Some of the students talking to the administration want the school to ban bottled water from school vending machines. Others want the school to keep making bottled water available to students, who could get sick if they drink from fountains. One group suggested that the school replace the germ-bearing fountains with water stations where students can refill reusable bottles.

The school administration has many factors to consider in making their decision. They are inviting students to make their views on this issue known." (page 53)

We recommend providing language in the instruction materials regarding the readily-recyclable nature of plastic water bottles and including an option to establish school recycling programs. We also suggest providing information about the second life of plastic products. More specifically:

- During 2007, California's overall recycling rate for beverage containers reached 67 percent, a 7 percent increase from 2006. This is the largest annual increase since 1990. (See: source)[5]

- Californians recycled over 14.7 billion beverage containers in 2007 - over 1.5 billion containers more than 2006. More specifically,

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[1] "At Store Recycling Program: Plastic Carryout Bags," California Integrated Waste Management Board, February 19, 2009. See: http://www.ciwmb.ca.gov/LGCENTRAL/Basics/PlasticBag.htm

[2] "Plastic bags (and wraps) that are typically recycled into recycled plastic products," See: http://www.PlasticBagRecycling.org.

[3] U.S. Environmental Protection Agency. *Municipal Waste in the United States: 2007 Facts and Figures (p. 52, Table 7)*. See: http://www.epa.gov/osw/nonhaz/municipal/pubs/msw07-rpt.pdf

[4] Moore Recycling Associates, Inc. *2007 National Post-Consumer Recycled Plastic Bag and Film Report*. Sonoma, California. 2009. See: http://www.americanchemistry.com/s_plastics/sec_content.asp?CID=1593&DID=8899

[5] Department of Conservation. *Biannual Report of Beverage Container Sales, Returns, Redemption and Recycling Rates*. Sacramento, California. 2008. See: http://www.consrv.ca.gov/dor/Notices/Biannual.pdf

#1 PET - 2,330,774,614

#2 HDPE - 256,710,868

#3 PVC - 107,992

#4 LDPE - 10,778

#5 PP - 77,063

#6 PS - 387,283

#7 Other - 2,579,342

(See: source)

- Recycled plastic bottles are used to make items ranging from fleece jackets and carpeting to detergent bottles and lumber for outdoor decking.

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